

Remarks

An RCE and this amendment is in response to the Office Action dated June 3, 2003. Claims 4, 30 and 32-34 have been amended and claims 1-3, 6-29 and 31 have been canceled without prejudice. New claims 36-46 have been added. Claims 4-5, 30 and 32-46 are currently pending. Reexamination and reconsideration are respectfully requested.

Claims 11-25 were previously canceled without prejudice as non-elected claims.

Applicant has canceled claims 1-3, 6-10 and 26-29 and 31 without prejudice to further prosecute these claims if desired. As a result, the rejection of claims 1-3, 6-10, 26-29 and 31 has been rendered moot at this time.

✓ Claim 34 was objected to for an informality. Applicant has amended the claim to insert the term "insulating" as requested by the Examiner.

✓ Claims 28, 30 and 35 were rejected (and the amendment objected to) under 35 U.S.C. 112 as containing subject matter which was not described in the specification in such a way as to reasonably convey that the inventors has possession of the claimed invention. Applicant has canceled claim 28. Claim 30 was amended to depend from claim 32. Applicant respectfully traverses the rejection. Applicant directs the Examiner to Figure 3, which shows "an angle at an intersection between the lower surface of the trench and a side surface of the trench is greater than 90 degrees." Applicant does not understand the Examiner's rejection, as Fig. 3 (which was part of the original filed application papers) appears to show that the inventors had possession of the claimed invention. In view of the above, applicant respectfully requests that the rejection (and objection) be withdrawn.

Claims 4-5 and 32-35 were rejected under U.S.C. 103(a) as unpatentable over U.S. Patent No. 5,275,965 to Manning ("Manning") in view of U.S. Patent No. 6,329,266 to Hwang et al. ("Hwang"). The rejection is respectfully traversed.

Claim 4 has been rewritten and is now in independent form and recites forming an etching stopper layer that is silicon nitride. Claim 5 depends from claim 4. Claim 34 also recites the formation of a silicon nitride layer. The Examiner stated on pages 6-7 of the Office Action that it would have been obvious "to use silicon nitride, instead of polysilicon, as etching stopper layer since both polysilicon and silicon nitride are considered equivalent materials . . ."

Applicant does not agree with the Examiner's rationale and respectfully submits that such a basis for the combination is legally insufficient. Manning appears to use polysilicon as part of "gated sidewalls". See Manning abstract and col. 1, lines 47-48) To form a gated sidewall as in Manning, it appears that the sidewall must include a conducting material that is tied to the substrate. Manning, col. 1, lines 49-54, col. 3 and Manning claims 1 and 4. Silicon nitride, on the other hand, is not a conducting material. As a result, since Manning appears to teach that a conducting material is used, it would appear that Manning teaches away from a material such as silicon nitride as in Hwang and that such materials are not interchangeable. Accordingly, applicant respectfully submits that the Examiner's citations to the art do not establish that one of ordinary skill would combine Manning and Hwang as suggested by the Examiner and the rejection of claim 4 and its dependent claim 5 and the rejection of claim 34 and its dependent claim 35 should be withdrawn.

In rejecting claim 32, the Examiner stated that "Manning fails to show implanting an impurity into a first and second regions of the substrate prior to etching the second portion of the insulating layer Hwang et al. expressly discloses in Fig. 6 the step of implanting an impurity into regions of the substrate 200 after etching the insulating layer 206 for the purpose of reducing the time needed to remove the active nitride polishing stopper layer." Applicant respectfully submits that the Examiner's rationale is flawed and the rejection of claim 32 and its dependent claim 33 should be withdrawn. Applicant notes that Hwang appears to implant the impurity into the "active nitride layer 202b" in order to "weaken the Si-N bonding force of the active nitride layer." Hwang at col. 3, lines 34-36. The Examiner's citations to Hwang do not appear to describe implanting into the silicon substrate as recited in claim 32. Accordingly, applicant respectfully submits that the Examiner's citations to Hwang do not overcome the deficiencies of Manning and the rejection of claim 32 and its dependent claim 33 should be withdrawn.

For at least the above reasons, applicant respectfully submits that the Examiner has not established a prima facie case of obviousness and the rejection of claims 4-5 and 32-35 should be withdrawn.

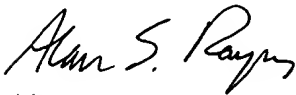
New claims 36-46 have been added. It is believed that no new matter has been entered. Examination of the new claims is respectfully requested.

The Office Action also included various comments concerning the art and the non-

patentability of features in various of the above mentioned claims. The discussion above has directly addressed some of those comments and the Examiner's other comments are deemed moot at this time in view of this response.

Applicant respectfully submits that the pending claims are in patentable form for at least the reasons stated above. Reexamination and reconsideration are respectfully requested. If, for any reason, the application is not in condition for allowance, the Examiner is requested to telephone the undersigned to discuss the steps necessary to place the application into condition for allowance.

Respectfully submitted,



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September 3, 2003
(Date)